

Appendix D
Preliminary CHART Assessment for the
South-Central California Coast (SCCC) *O. mykiss* ESU

ESU Description

The SCCC *O. mykiss* ESU was listed as a threatened species in 1997 (62 FR 43937). The ESU includes all naturally spawned populations of *O. mykiss* in coastal river basins from the Pajaro River southward to, but not including, the Santa Maria River. The major watersheds occupied by naturally spawning fish in this ESU include the Pajaro River, Salinas River, Carmel River, and numerous smaller rivers and stream along the Big Sur coast and southward. Most of the rivers in this ESU drain the Santa Lucia Range, the southernmost unit of the California Coast Ranges and only winter *O. mykiss* are found in this ESU. The climate is drier and warmer than in the north which is reflected in vegetational changes from coniferous forest to chaparral and coastal scrub. The mouths of many rivers and streams in this ESU are seasonally closed by sand berms that form during periods of low flow in the summer. Based on an updated status review (NMFS 2003a), NMFS recently proposed that the ESU remain listed as a threatened species and that resident *O. mykiss* co-occurring with anadromous populations below impassible barriers (both natural and man-made) be included in the ESU (69 FR 33102; June 14, 2004). A Technical Recovery Team has been formed and is in the process of identifying the historical and extant independent population structure of this ESU and associated population viability criteria. The time frame for completion of this work is uncertain.

CHART Area Assessments

The CHART assessment for the SCCC *O. mykiss* ESU addressed 30 occupied CALWATER Hydrologic Subareas (HSAs) organized or nested into 8 Hydrologic Units (HUs) or subbasins (Figures D1 and D2). One of the 30 occupied HSA watersheds was Morro Bay which serves as rearing and migration habitat for some populations in this ESU. The HSAs were chosen as freshwater critical habitat units because they present a convenient and systematic way to organize the CHART's watershed assessments for this ESU. Information presented below for individual HUs (size, counties, total stream miles, occupied stream miles, and habitat use) were generated from GIS data sets compiled by NMFS Southwest Region (NMFS 2004a).

Unit 1. Pajaro River Subbasin (HU 3305)

The Pajaro River HU is located in the northern part of the ESU and includes the Pajaro River and its tributaries. The HU encompasses approximately 1,311 mi² and occurs within portions of Fresno, Merced, Monterey, San Benito, Santa Clara, Santa Cruz, and Stanislaus Counties, but the vast majority of the unit occurs in San Benito and Santa Clara Counties. The HU contains 5 HSAs (although a portion of one HSA is located outside the boundary of the ESU), all of which are occupied, and approximately 1,861 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 296 miles of occupied riverine and/or estuarine habitat in the 5 occupied HSAs (NMFS 2004a). The CHART concluded that these occupied HSAs contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified several management activities that may affect the PCEs. Table D1 summarizes the total miles of occupied riverine/estuarine reaches for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map D1 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The team also concluded that inaccessible habitat above Uvas Dam in Uvas Creek (a tributary to the Pajaro River) may be essential to the conservation of the ESU. The team also concluded that this unoccupied habitat area may be essential for conservation because: (1) it supports O. mykiss native to the Pajaro River watershed and contains habitat suitable for spawning and rearing, and (2) efforts are underway to implement a long-standing agreement between the South Santa Clara Valley Water Conservation District and the State of California to provide fish passage past this dam.

Unit 2. Bolsa Neuva Subbasin (HU 3306)

The Bolsa Neuva HU is a small watershed unit located in the northern part of the ESU which includes Elkhorn Slough. The HU encompasses approximately 51mi² and occurs Monterey and San Benito Counties. The HU contains 1 HSA which is not considered occupied and approximately 63 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists indicate that the HU is not occupied (NMFS 2004a). Map D2 depicts the this HU. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Unit 3. Carmel River Subbasin (HU 3307)

The Carmel River HU is located in the northwestern portion of the ESU and includes the

Carmel River watershed. The HU encompasses approximately 256 mi² and occurs entirely within Monterey County. The HU contains only one HSA which is occupied and approximately 404 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 136 miles of occupied riverine/estuarine habitat in the single occupied HSA (NMFS 2004a). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified management activities that may affect the PCEs. Table D1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map D3 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Unit 4. Santa Lucia Subbasin (HU 3309)

The Santa Lucia HU is located along the Big Sur coastal area and includes the Big Sur River and Little Sur River watersheds. The HU encompasses approximately 302 mi² and occurs entirely within Monterey County. This HU contains only a single HSA which is occupied and approximately 442 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 102 miles of occupied riverine/estuarine habitat in this single occupied HSA (NMFS 2004a). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified management activities that may affect the PCEs. Table D1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in the occupied HSA. Map D4 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Unit 5. Salinas Subbasin (HU 3309)

The Salinas HU is located in the north-central portion of the ESU and includes the Salinas River watershed which is the largest in the ESU. This is the largest HU in the ESU and encompasses approximately 3,527 mi² primarily in Monterey and San Luis Obispo Counties. The HU contains 12 HSAs, 7 of which are occupied, and approximately

4,727 miles of streams (at 1:100,000 hydrography).- Fish distribution and habitat use data compiled by NMFS biologists identify approximately 375 miles of occupied riverine/estuarine habitat in the 7 occupied HSAs (NMFS 2004a). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified management activities that may affect the PCEs. Table D1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in the occupied HSA. Map D5 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Unit 6. Estero Bay Subbasin HU (3310)

The Estero Bay HU is located along the southern coast of the ESU and includes a large number of small coastal streams including Arroyo De La Cruz, San Simeon Creek, Santa Rosa Creek, Morro Creek, San Luis Obispo Creek, and Arroyo Grande Creek. The HU encompasses approximately 751 mi² and occurs primarily in San Luis Obispo County. The HU contains 17 HSAs, 15 of which are occupied, and approximately 940 miles of streams (at 1:100,000 hydrography). One of these occupied watersheds is Morro Bay into which the Morro Creek and Chorro Creek watersheds drain. Morro Bay encompasses an area of approximately 3mi² and is an important rearing and migration habitat for populations occupying watersheds draining into the Bay. Fish distribution and habitat use data compiled by NMFS biologists identify approximately 352 miles of occupied riverine/estuarine habitat in the 15 occupied HSAs (NMFS 2004a). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified management activities that may affect the PCEs. Table D1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in the occupied HSA. Map D6 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Units 7 (Santa Maria Subbasin - HU 3312) and 8 (Estrella Subbasin - HU 3317)

Portions of the Santa Maria and Estrella HUs are within the geographic range of this

ESU, but do not contain occupied habitat. The Santa Maria HU includes a single HSA (Guadalupe; 331210) which is divided by the ESU boundary. All occupied habitat within this HSA occurs within the range of the Southern California *O. mykiss* ESU. The Estrella HU contains a single HSA (Estrella River; 331700) which is unoccupied.

CHART Preliminary Conservation Value Rating

Freshwater Areas

After reviewing the best available scientific data regarding critical habitat for this ESU, the CHART concluded that most of the occupied HSAs were of high or medium conservation value to the ESU. Of the 30 occupied HSAs that were evaluated, 13 were rated as having high conservation value, 11 were rated as having medium conservation value, and 6 were rated as having low conservation value. Table D2 summarizes the CHARTs PCE/watershed scores and preliminary conservation value ratings (i.e. low, medium or high). Figure D7 shows the overall spatial distribution of conservation ratings for occupied HSAs within the range of the ESU.

Marine Areas

NMFS determined that marine areas did not warrant consideration as critical habitat for this ESU.

References and Sources of Information

NMFS 2003a. Updated Status of Federally Listed ESUs of West Coast Salmon and Steelhead. West Coast Salmon Biological Review Team; Northwest Fisheries Science Center and Southwest Fisheries Science Center. July 2003.

NMFS 2004a. GIS and Associated Data Related to Critical Habitat Designations for Seven ESUs of Salmon and *O. mykiss* in California. Compiled by NMFS, Southwest Region.

Federal Register Notices

62 FR 43937 - South-Central California Coast Steelhead Listing Determination (1997)

69 FR 33102 - Proposed Listing Determinations for 27 West Coast Salmon and Steelhead ESUs (June 2004)

Table D1. Summary of Occupied Subbasins/Watersheds, PCE's, and Management Activities Affecting PCE's for the South-central California Coast Steelhead ESU

Map Code	Basin	Watershed	Calwater Unit	Spawning/Rearing PCEs (mi)**	Rearing/Migration PCEs (mi)**	Presence/Migration Only PCEs (mi)**	Management Activities***
	Pajaro River	Watsonville	330510	42	58	56	FC, WI, NW
	Pajaro River	Santa Cruz Mountains	330520	26	29	29	WI, NW
	Pajaro River	South Santa Clara Valley	330530	41	85	85	FC, RB
	Pajaro River	Pacheco-Santa Ana Creek	330540	20	22	18	NH
	Pajaro River	San Benito River	330550	15	69	69	GM, WI
	Bolsa Nueva	Bolsa Nueva	330600				
	Carmel River	Carmel River	330700	92	93	86	NH, FC, NW, NW
	Santa Lucia	Santa Lucia	330800	95	96	62	RB
	Salinas	Neponset	330911	7	37	37	AG, FC, WL
	Salinas	Moro Cojo	330912				
	Salinas	Chualar	330920	1	1		
	Salinas	Soledad	330930	7	48	48	RB, WI
	Salinas	Upper Salinas Valley	330940		38	38	AG, WI
	Salinas	Monterey Peninsula	330950				
	Salinas	Arroyo Seco	330960	58	58	49	RB
	Salinas	Gabilan Range	330970	8	8		
	Salinas	Paso Robles	330981	68	125	115	H, NH, WI
	Salinas	Nacimiento Reservoir	330982				
	Salinas	San Antonio Reservoir	330983				
	Salinas	Pozo	330990				
	Estero Bay	San Carpoforo	331011	15	15	5	GM, CM
	Estero Bay	Arroyo de la Cruz	331012	28	28	28	GR, WI
	Estero Bay	San Simeon	331013	58	57	52	WI, RB
	Estero Bay	Santa Rosa	331014	18	27	16	GR, RB
	Estero Bay	Villa	331015	27	27	27	GR, AG
	Estero Bay	Cayucos	331016	15	15	15	GR, AG
	Estero Bay	Old	331017	1	1		NH
	Estero Bay	Toro	331018	12	12		AG, GR
	Estero Bay	Morro	331021	25	25	25	GR, AG, WI
	Estero Bay	Chorro	331022	30	31	20	NH, RB
	Estero Bay	Los Osos	331023	7	7		GR, AG
	Estero Bay	San Luis Obispo Creek	331024	39	39	6	UR, CM, GR
	Estero Bay	Point San Luis	331025	22	21	14	
	Estero Bay	Pismo	331026	12	14	8	NH, GR, WI
	Estero Bay	Morro Bay	331027				
	Estero Bay	Oceano	331031	15	24	8	NH, AG
	Estero Bay	Nipomo Mesa	331032				
	Santa Maria	Guadalupe	331210				
	Estrella	Estrella River	331700				

*Total Stream Miles calculated from blue line streams represented on 1:100,000 USGS Topographic Maps

**Overlap of stream miles may occur between the three habitat types.

***Management Activities Codes:

AG - Agriculture
CM - Channel Modification
ES - Exotic / Invasive Species
FC - Flood Control Channel
FR - Forestry
GM - Sand and Gravel Mining

GR - Grazing
HD - Hydroelectric Dam
NH - Non-hydro Dam
NW - Non-agriculture Withdrawals / Impoundments
PO - Poaching
RB - Road Building / Maintenance

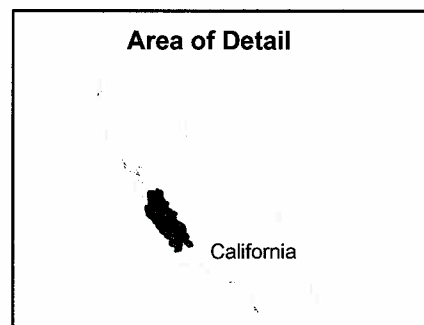
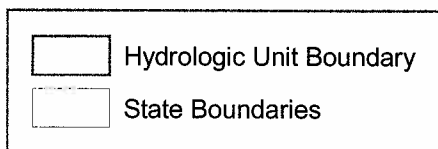
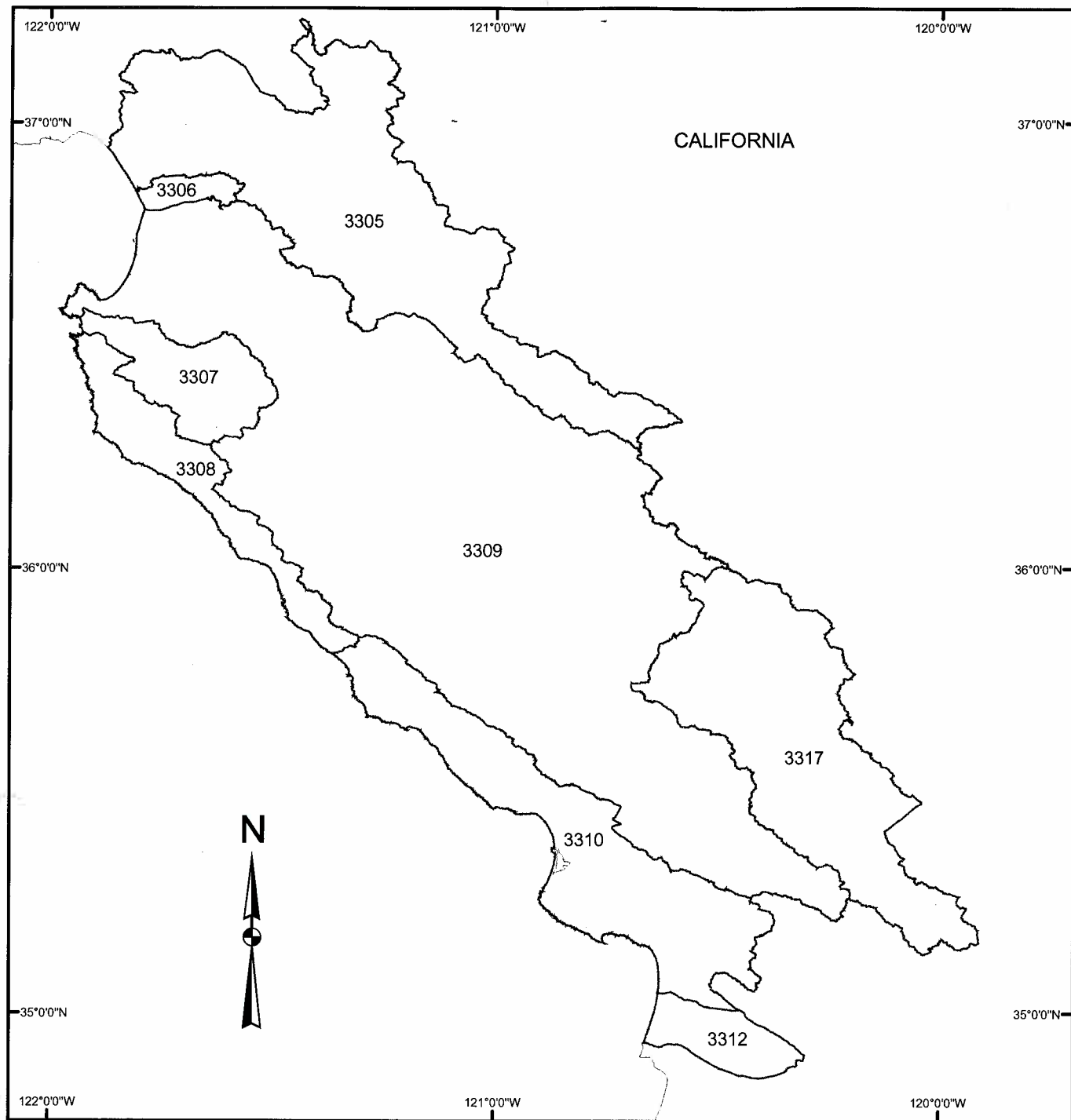
SP - Septic System Failure / Contamination
TR - River, Estuary, Ocean Traffic
UR - Urbanization
WI - Agriculture Withdrawals / Impoundments
WL - Wetland Loss / Removal

Table D2. Summary of Preliminary Scores/Overall Conservation Value Rankings for the South-central California Coast Steelhead ESU

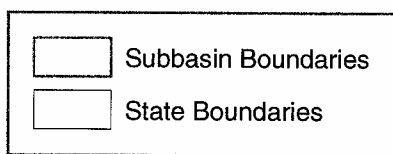
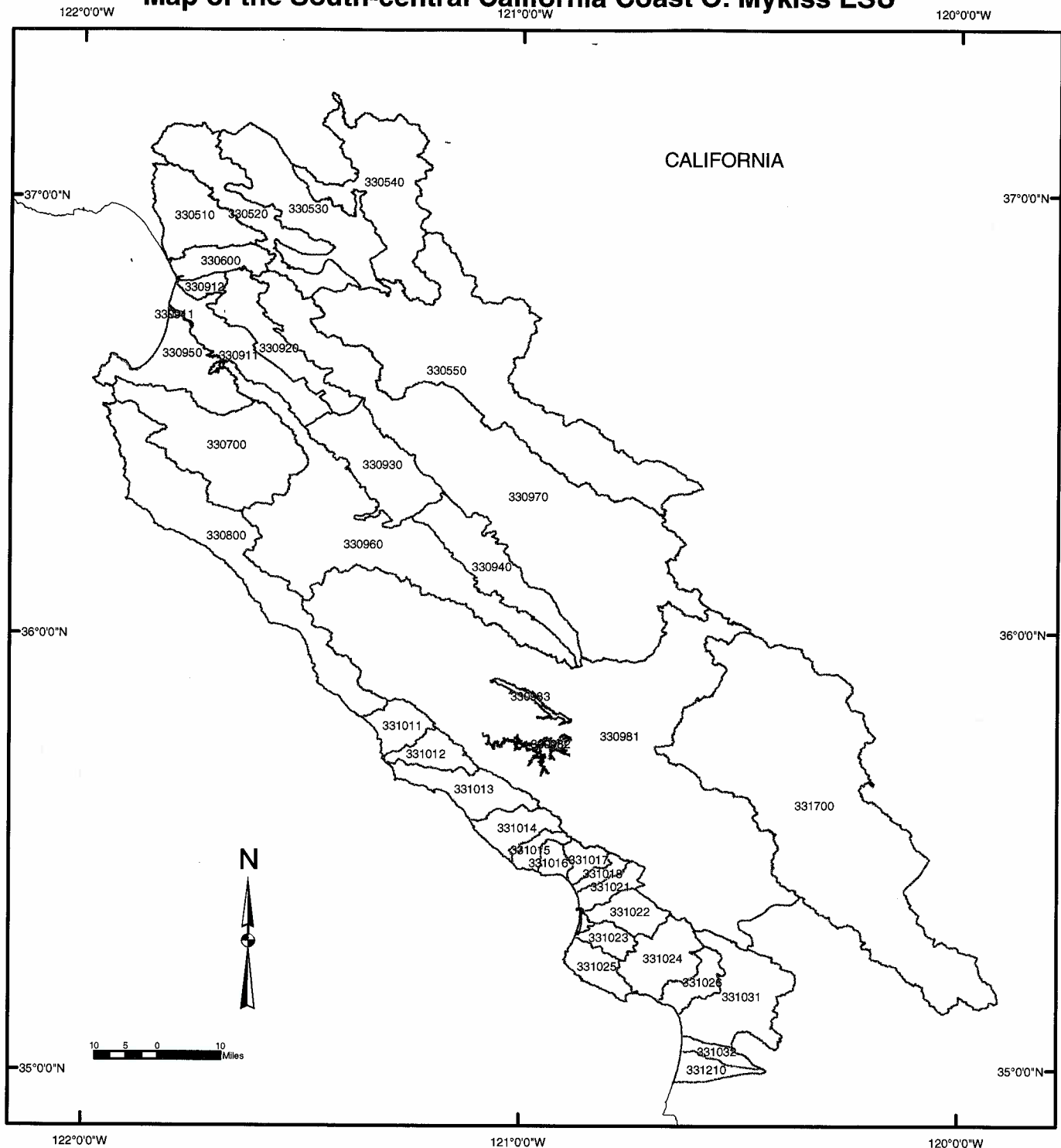
Map Code	Basin	Watershed	Calwater Unit	Total Score (0-18)	Comments / Other Considerations	Preliminary Conservation Value
	Pajaro	Watsonville	330510	11		High
	Pajaro	Santa Cruz Mountains	330520	11		High
	Pajaro	South Santa Clara Valley	330530	10		Medium
	Pajaro	Pachecho-Santa Ana Creek	330540	10		Medium
	Pajaro	San Benito River	330550	10		Medium
	Bolsa Neuva	Bolsa Neuva	330600			NA
	Carmel River	Carmel River	330700	11		High
	Santa Lucia	Santa Lucia	330800	11		High
	Salinas	Neponset	330911	7		Low
	Salinas	Moro Cojo	330912			NA
	Salinas	Chualar	330920	5		Low
	Salinas	Soledad	330930	7		Low
	Salinas	Upper Salinas Valley	330940	7		Low
	Salinas	Monterey Peninsula	330950			NA
	Salinas	Arroyo Seco	330960	13		High
	Salinas	Gabilan Range	330970	9		Medium
	Salinas	Paso Robles	330981	14		High
	Salinas	Nacimiento Reservoir	330982			NA
	Salinas	San Antonio Reservoir	330983			NA
	Salinas	Pozo	330990			NA
	Estero Bay	San Carpoforo	331011	8		Medium
	Estero Bay	Arroyo de la Cruz	331012	10		Medium
	Estero Bay	San Simeon	331013	11		High
	Estero Bay	Santa Rosa	331014	12		High
	Estero Bay	Villa	331015	7		Low
	Estero Bay	Cayucos	331016	7		Low
	Estero Bay	Old	331017	10		Medium
	Estero Bay	Toro	331018	10		High
	Estero Bay	Morro	331021	11		High
	Estero Bay	Chorro	331022	12		High
	Estero Bay	Los Osos	331023	9		Medium
	Estero Bay	San Luis Obispo Creek	331024	11		High
	Estero Bay	Point San Luis	331025	9		Medium
	Estero Bay	Pismo	331026	9		Medium
	Estero Bay	Morro Bay	331027			NA
	Estero Bay	Oceano	331031	8		Medium
	Estero Bay	Nipomo Mesa	331032			NA
	Santa Maria	Guadalupe	331210			NA
	Estrella	Estrella River	331700			NA

Figures D1 and D1 - CALWATER Hydrologic Units and Hydrologic Subareas within the Range of the South-Central California Coast *O. mykiss* ESU

Map of the South-central California Coast *O. mykiss* ESU



Map of the South-central California Coast O. Mykiss ESU



Maps D1 through D6: South-Central California Coast *O. mykiss* ESU - Areas (Units)
Under Consideration for Critical Habitat Designation

D1 - Unit 3305 (Pajaro River HU)

D2 - Unit 3306 (Bolsa Neuva HU)

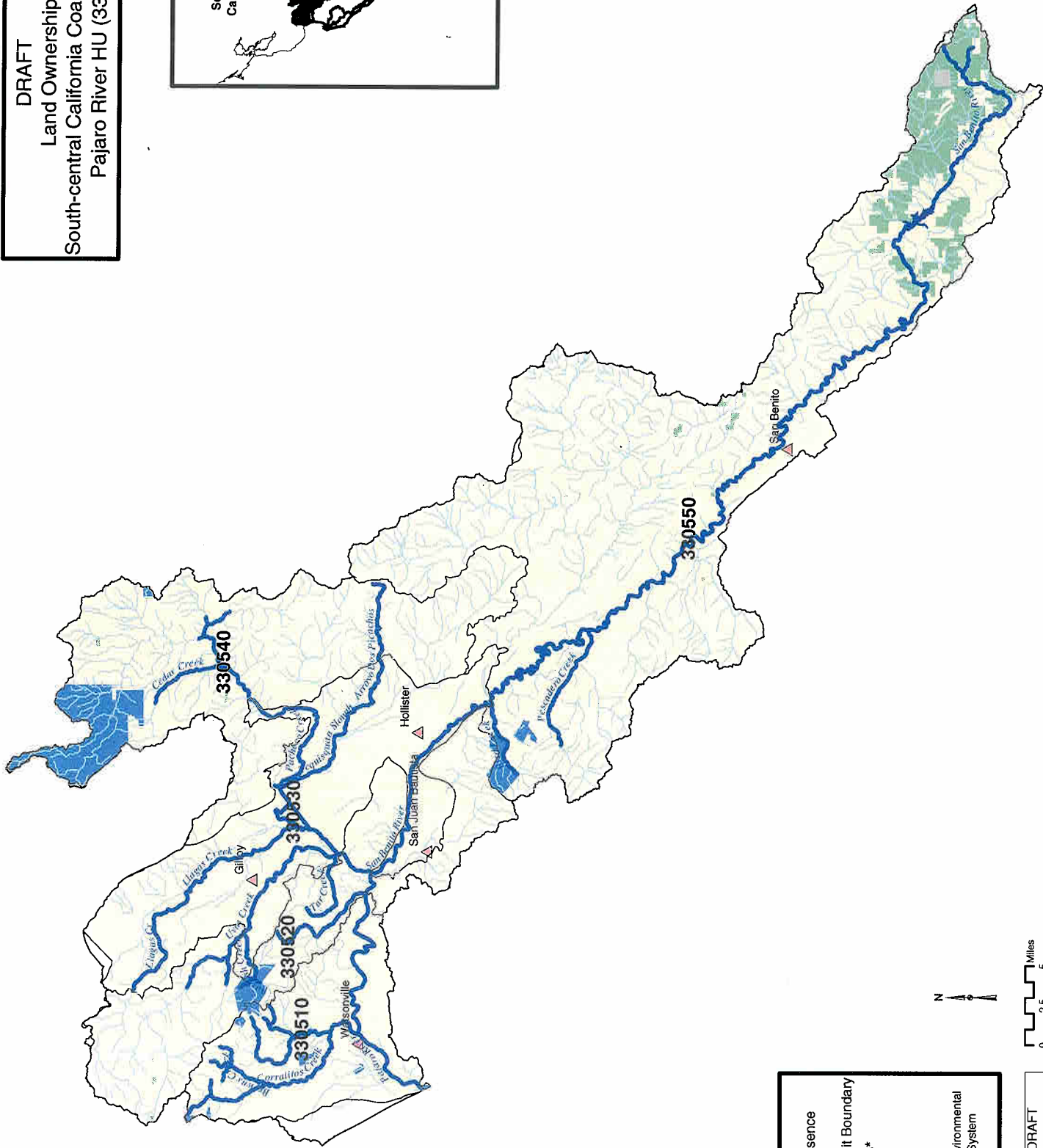
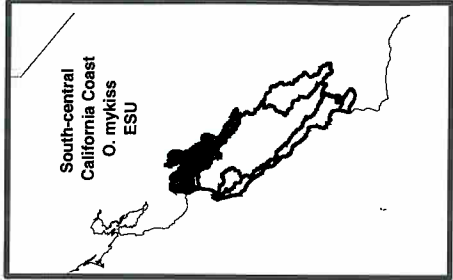
D3 - Unit 3307 (Carmel River HU)

D4 - Unit 3308 (Santa Lucia HU)

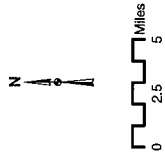
D5 - Unit 3309 (Salinas HU)

D6 - Unit 3310 (Estero Bay HU)

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Land Ownership
South-central California Coast *O. mykiss*
Pajaro River HU (3305)

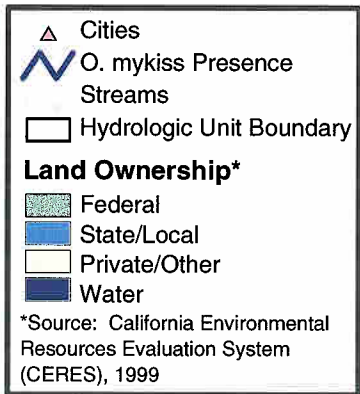
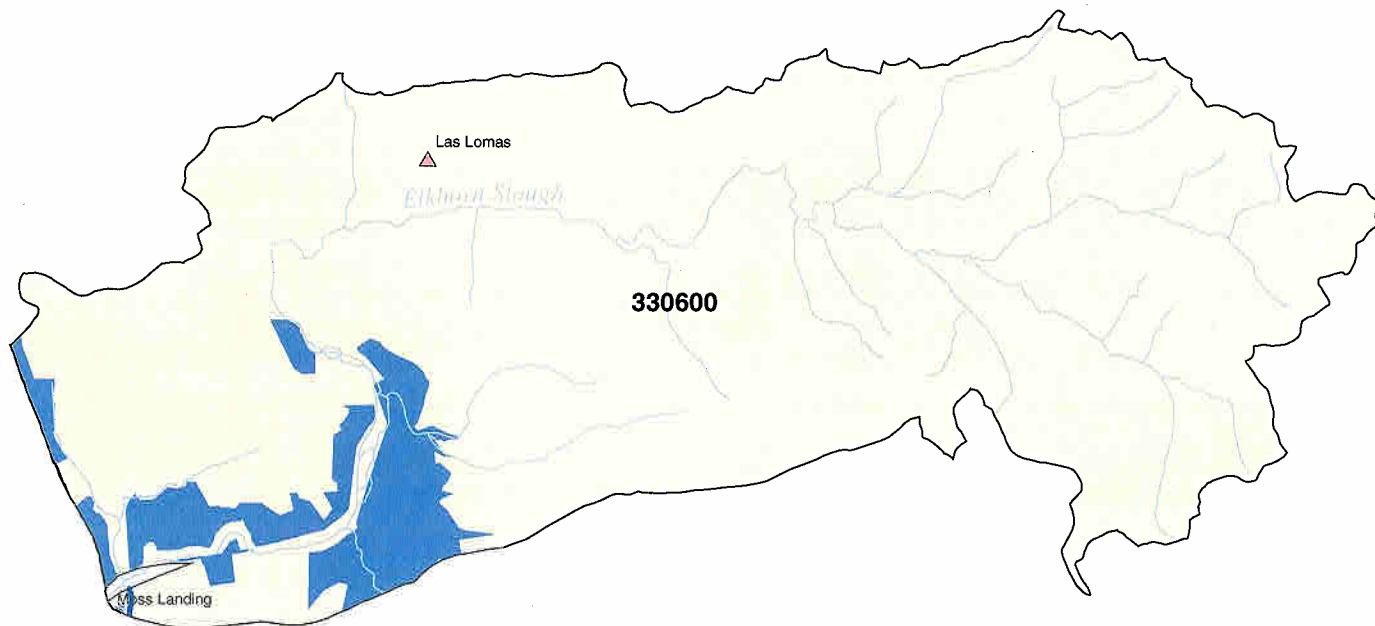
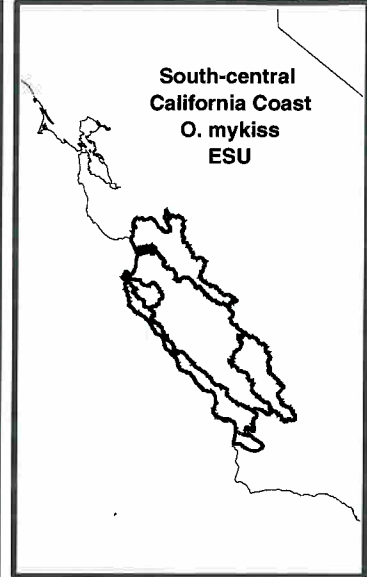


▲ Cities
 ~ Streams
 □ Hydrologic Unit Boundary
Land Ownership*
 ■ Federal
 ■ State/Local
 ■ Private/Other
 ■ Water
 *Source: California Environmental Resources Evaluation System (CERES), 1999

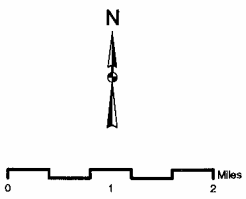


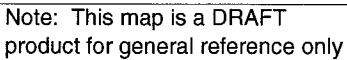
Note: This map is a DRAFT product for general reference only

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Land Ownership
South-central California Coast O. mykiss
Bolsa Neuva HU (3306)

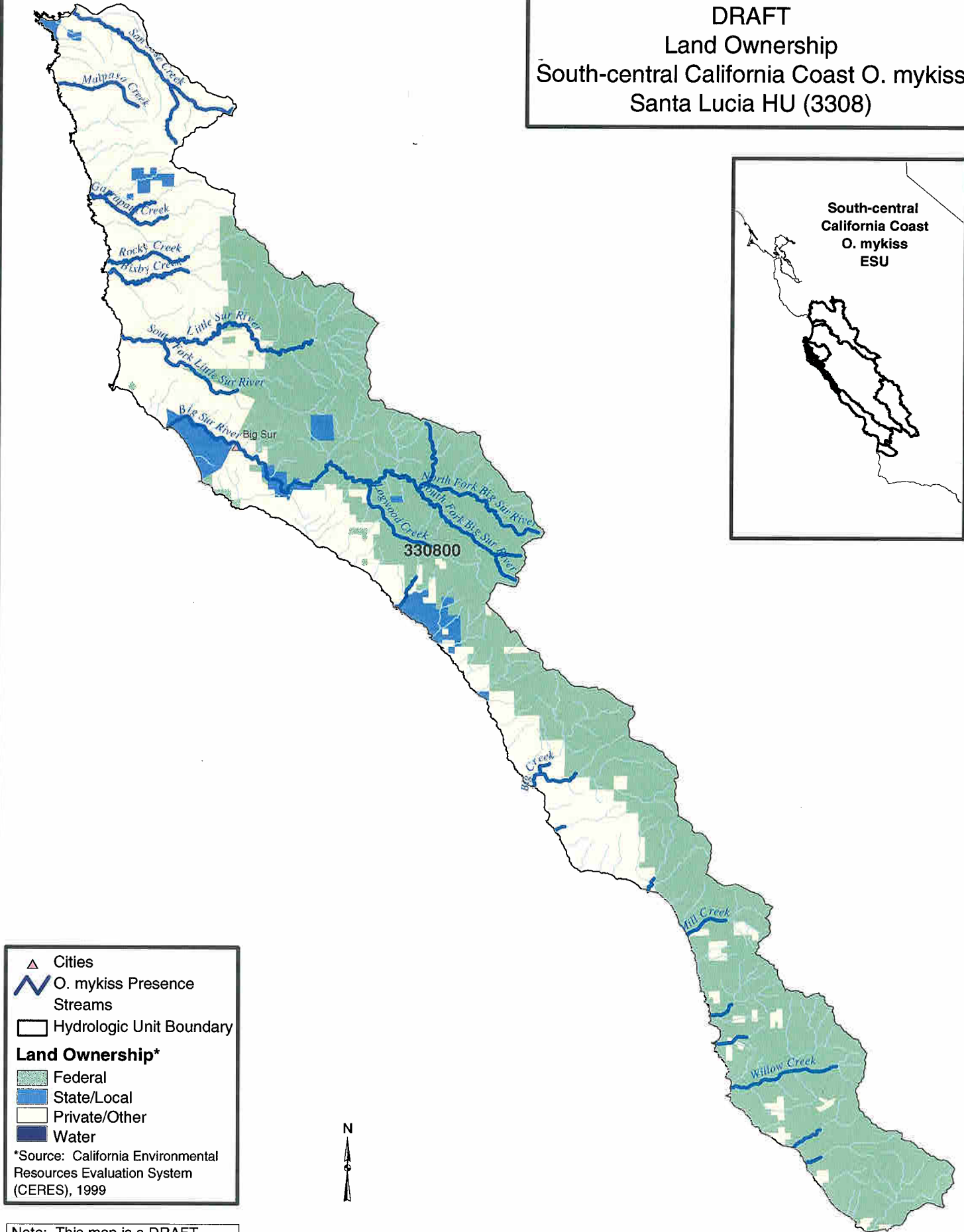
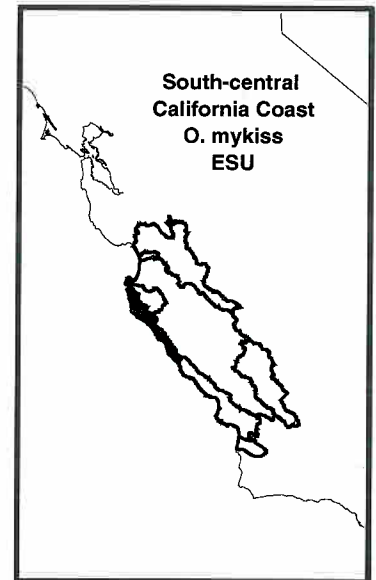


Note: This map is a DRAFT product for general reference only





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Land Ownership
South-central California Coast *O. mykiss*
Santa Lucia HU (3308)

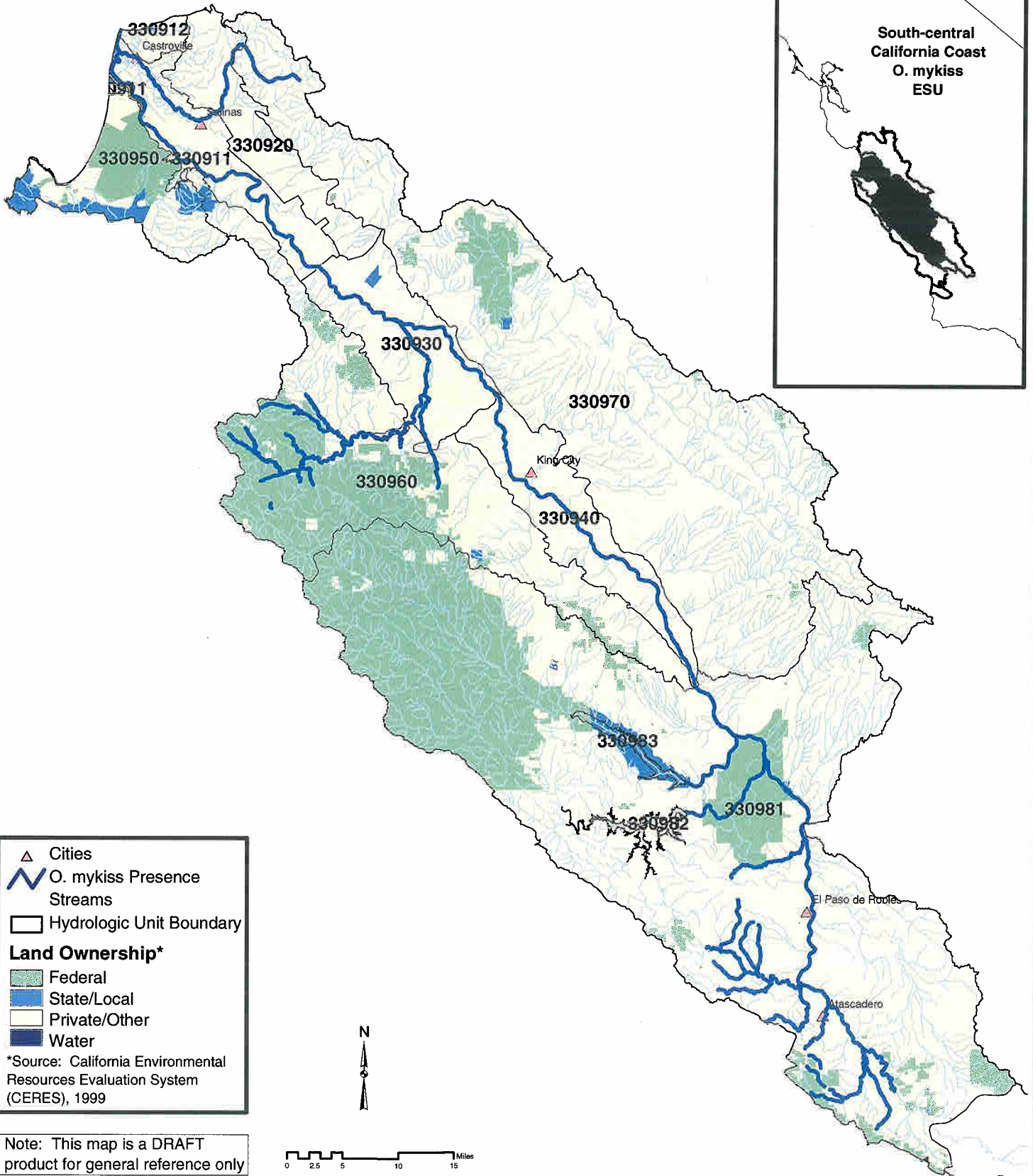


- △ Cities
 - *O. mykiss* Presence
 - Streams
 - Hydrologic Unit Boundary
 - Land Ownership***
 - Federal
 - State/Local
 - Private/Other
 - Water
- *Source: California Environmental Resources Evaluation System (CERES), 1999

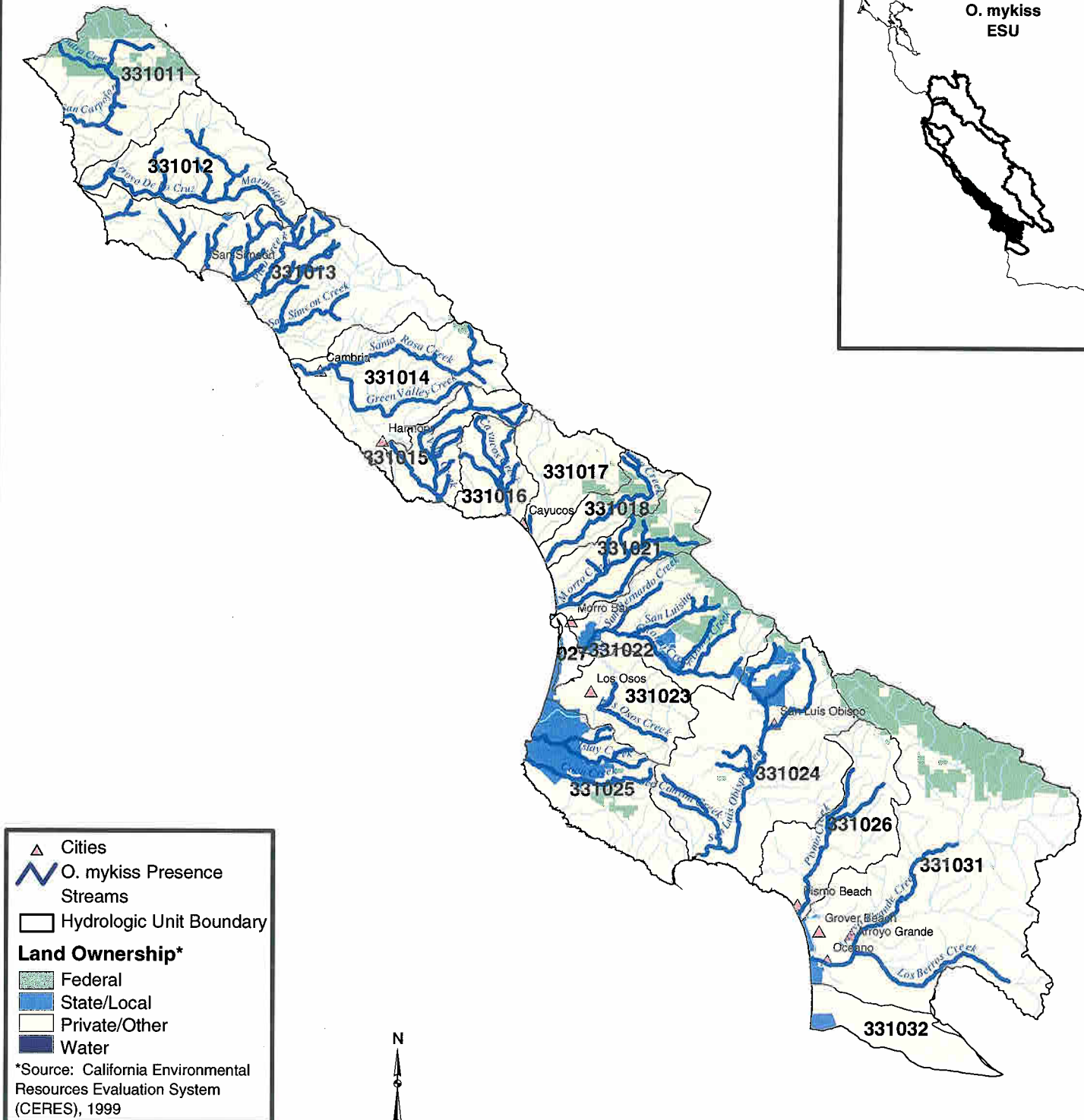
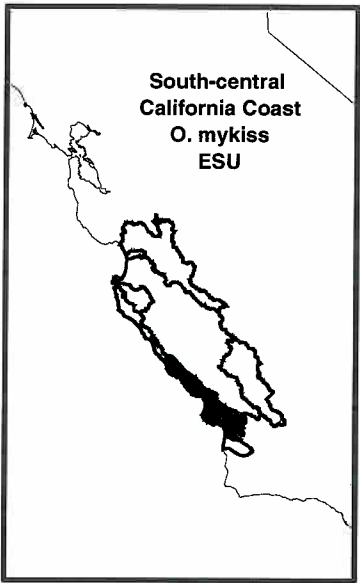
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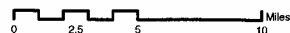
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Land Ownership
South-central California Coast *O. mykiss*
Salinas River HU (3309)



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Land Ownership
South-central California Coast O. mykiss
Estero Bay HU (3310)



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Map D7. Preliminary CHART Ratings of Conservation Value for CALWATER HSA
Watersheds occupied by the South-Central California Coast *O. mykiss* ESU

Draft
South - central California Coast *O. mykiss*
Watershed Conservation Rating

Map of the fifth- field watersheds occupied by the
South-central California Coast *O. mykiss* Evolutionarily Significant
Unit (ESU) and eligible for designation as critical habitat.

